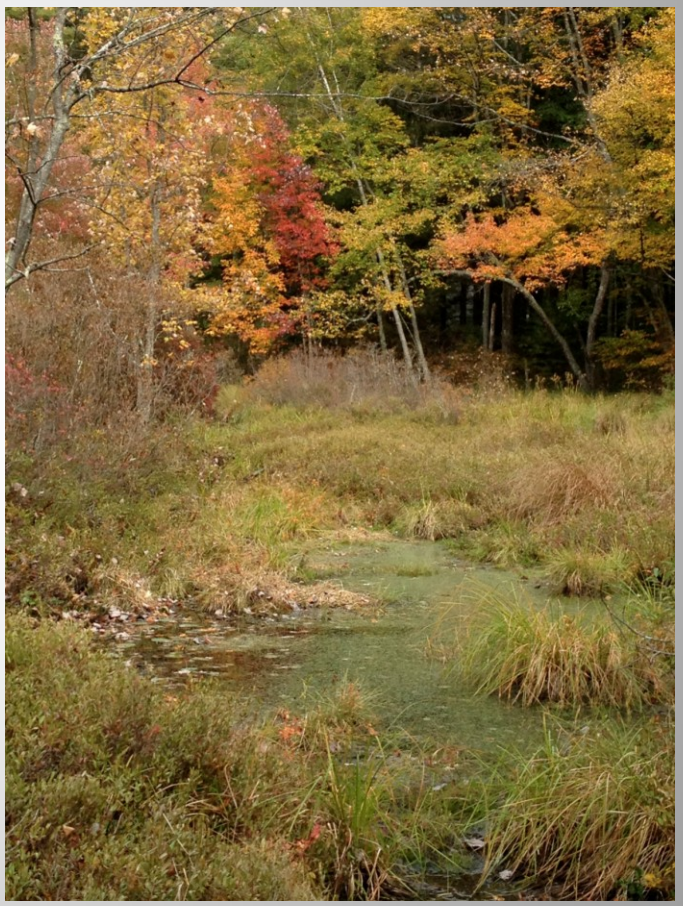
2014-2015
Notice of Intent
Acton Arboretum

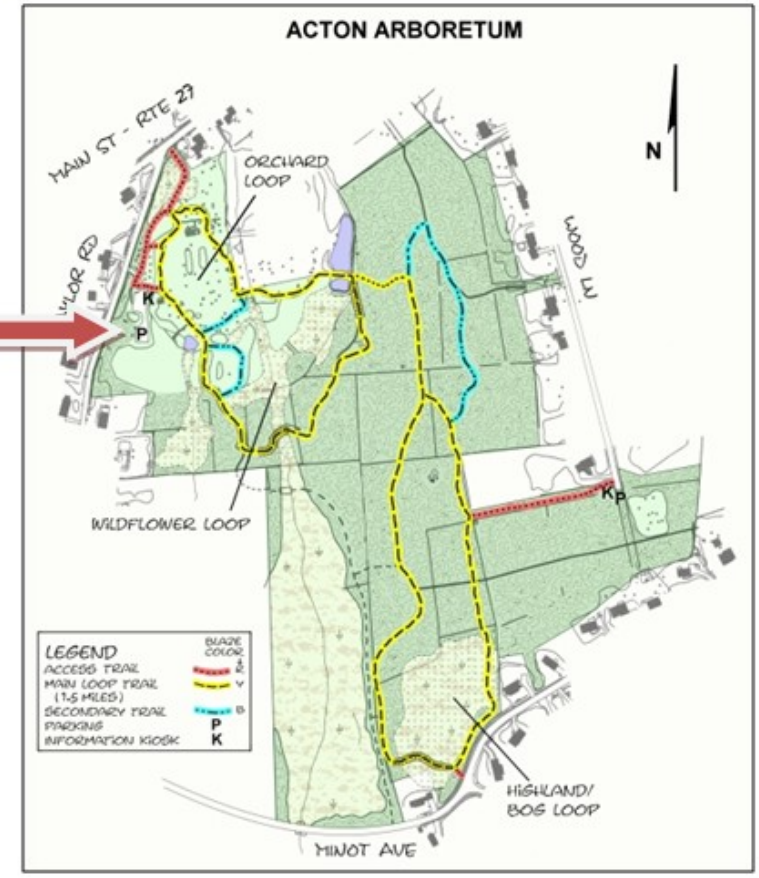
A) Taylor Road Parking Lot Renovation and Expansion

B) Bog Boardwalk Renovation and Sidewalk Access from Minot Ave.



Project Site

Location of Project Site



View at New Entrance (11/2014)

Parking Lot Project Details

- Expand parking capacity
- Add handicap parking spaces
- Create new one-way drive into the lot
- Handle drainage via Rain Garden
- Provide lined paved spaces
- Add new kiosk
- Locate accessible picnic table near kiosk

Improved Universal Accessiblity of "Trailhead"

- accessible pathway to new kiosk
- accessible walkway to handicap picnic table
- accessible portable toilet

Existing Parking Lot Conditions

Rain Gardens filter storm water run-off

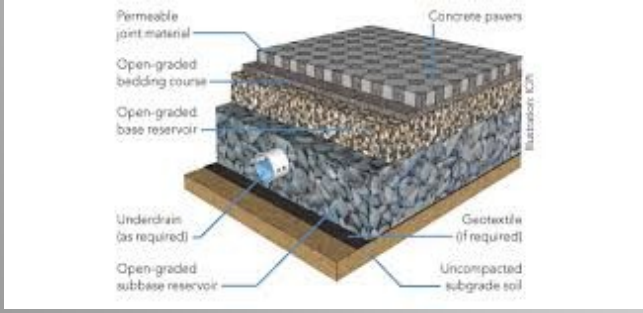
Pervious Pavement for Acton Arboretum Parking Lot

Why could we build a pervious parking area at NARA? There is 10'+ of outwash gravel below the parking lot's gravel surface, perfect for storm water recharge.

1. The existing Arboretum parking area is situated 2' above ledge, causing groundwater to sit at or near the surface for much of the spring. Would have to build parking lot up 3' to get enough drainage underneath.
2. The thin soils below the parking lot are unsorted glacial till, very poor for sub-surface drainage; the parking lot would be saturated for the entire spring, greatly reducing durability of pervious pavement.
3. The Arboretum is heavily used, is plowed and sanded regularly during winter months. This causes pervious pore spaces to become clogged.
4. According to Nashoba Paving Co. permeable pavement is 3X the cost of impervious pavement.
5. Prep requires digging 2' deep and adding a gravel base layer; not possible at Arboretum due to ledge.
6. According to D. Waite, Acton Hwy. Dept. the pervious pavement needs yearly maintenance to prevent ruts and pot-holes from developing.
7. Heavy trucks damage pervious pavement. Arboretum has regular trucks and heavy equipment performing work and deliveries.
8. Dirt or sand onto paving surface, transported by runoff or vehicles, will contribute to premature clogging and failure.
9. We have the ideal location to treat all surface runoff from our impervious surfaces through a rain garden. Benefits of rain gardens are:

a) They filter and infiltrate rain water.
B) Public education demonstration site for storm water treatment technology.

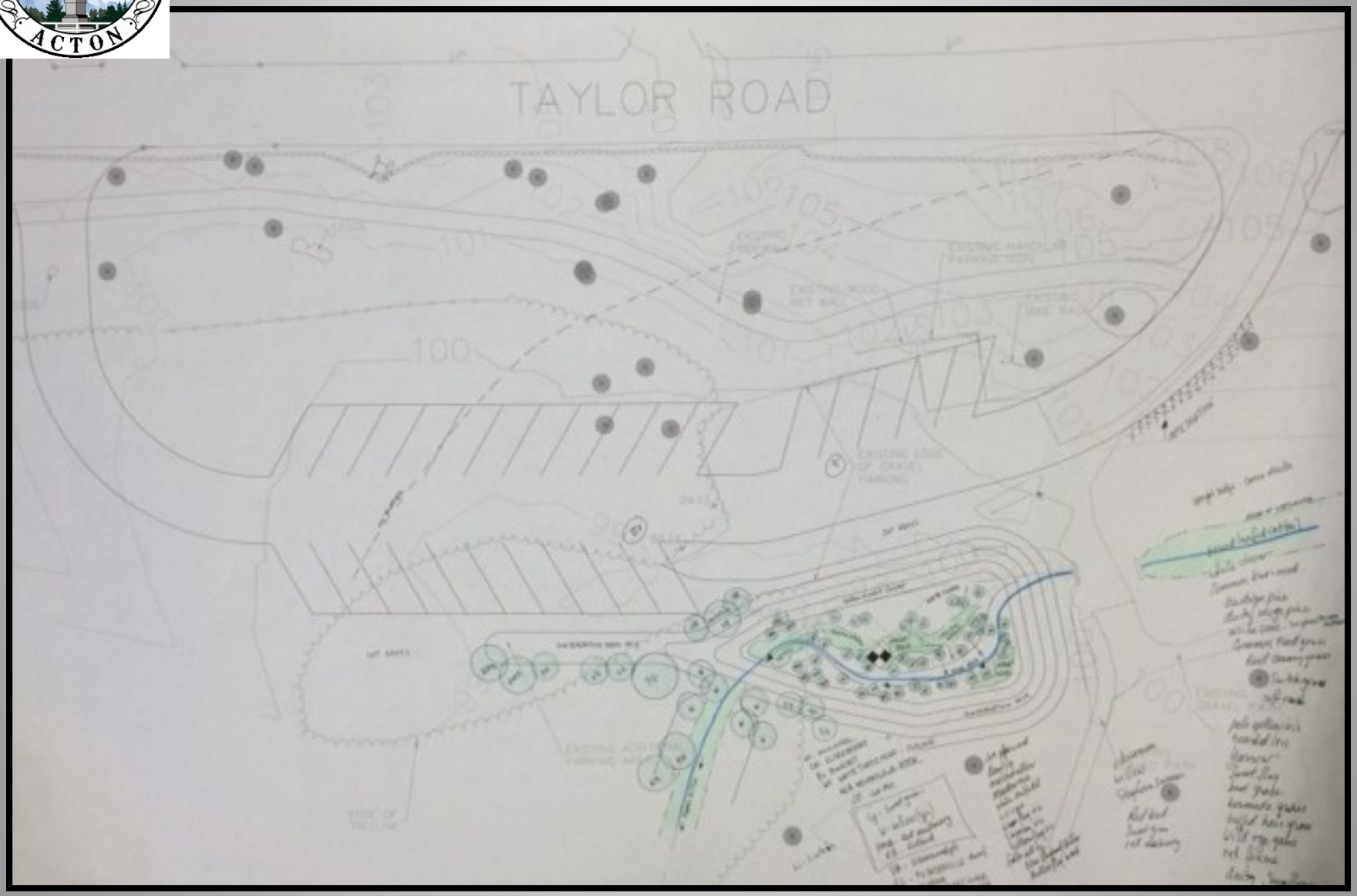
Other sources: Massachusetts Nonpoint Source Pollution Management; NCDENR Stormwater BMP Manual



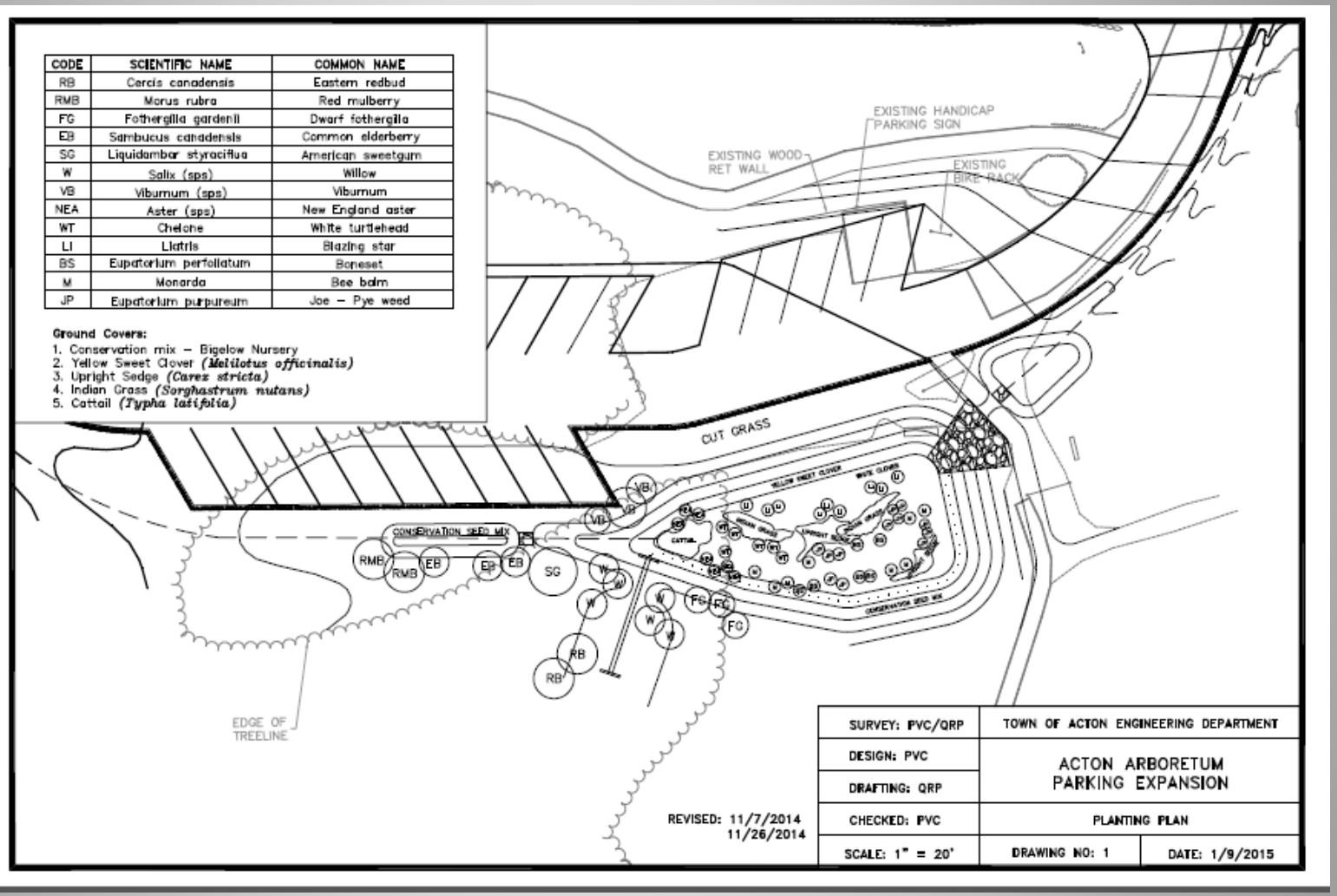
Parking Lot Planting Plan For Beautification

Parking Lot Plan 11-19-2014

Rain Garden Planting Plan



Rain Garden Planting Plan



Arboretum Rain Garden Plant List 1-7-2015

M- MONARDA
EB- ELDERBERRY
BS- BONESET
WT- WHITE TURTLEHEAD – CLEONE
NEA- NEW ENGLAND ASTER
JP- JOE PYE WEED

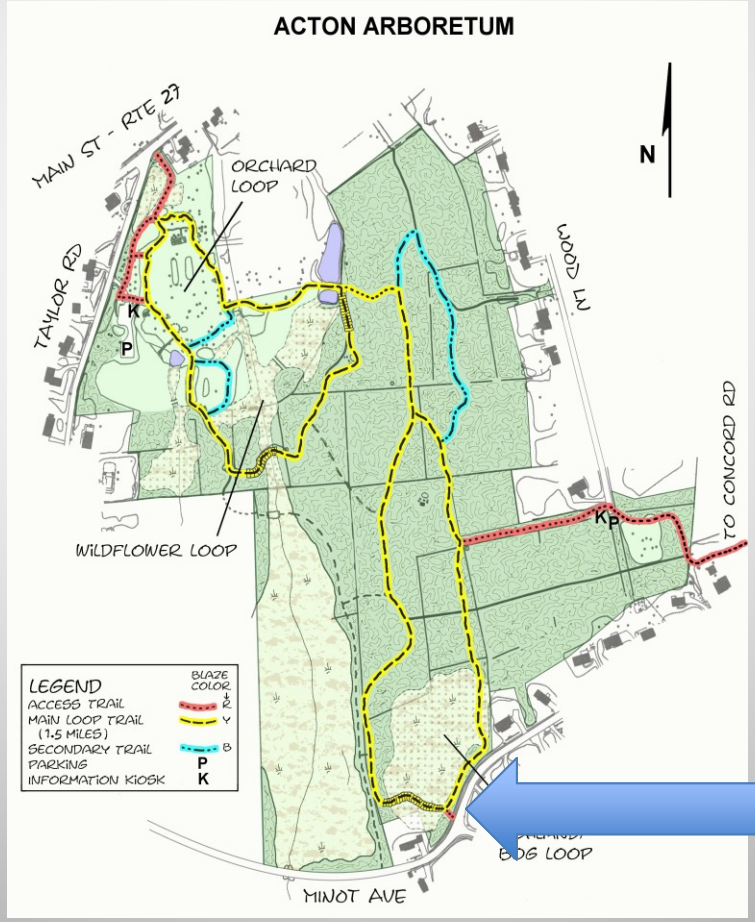
CONSERVATION SEED MIX

SG- SWEETGUM
W- WILLOW (sps)
RMB- RED MULBERRY
RB- REDBUD

VB- VIBURNUM (sps)
FG- FOTHERGILLA –dwarf
UPRIGHT SEDGE
YELLOW SWEET CLOVER
WHITE CLOVER
DAYLILY
MARSHMALLOW
MEADOW RUE
WHITE DAFFODIL
LIRIOPE

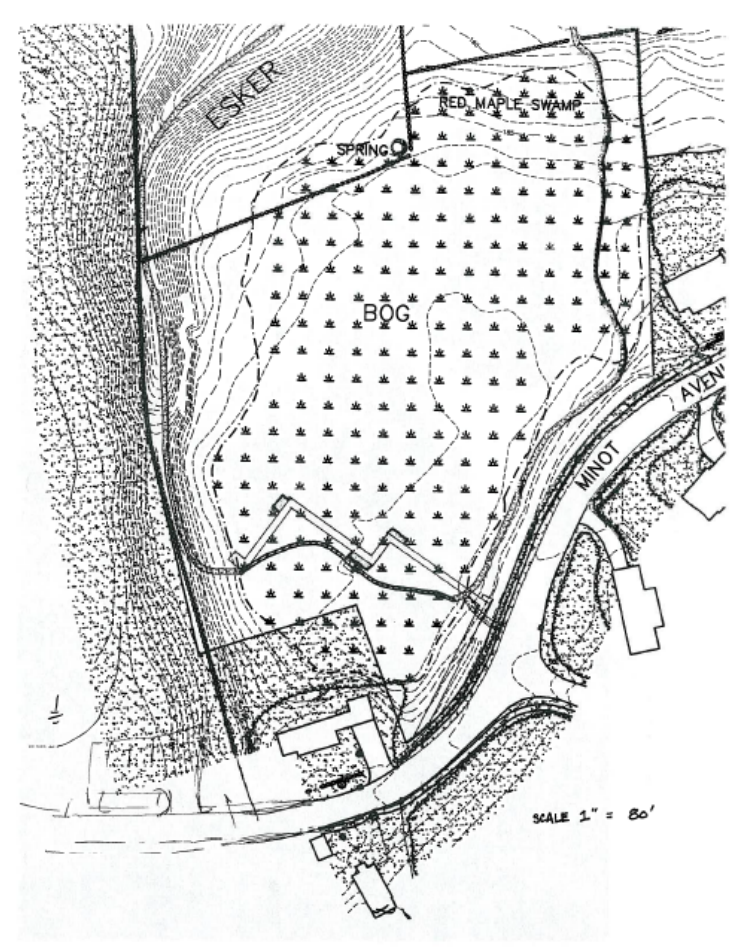
Arboretum Bog Boardwalk Rebuild and Sidewalk Access

Notice Of Intent (Conservation Commission 1-7-2015)



Project Site

Proposed Bog Boardwalk Design and Location



Arboretum Bog Boardwalk Rehabilitation

Build new elevated boardwalk through the bog:

- ADA handicap accessible boardwalk
- 4 feet wide with bumper rails; handrails at open water portion
- Non-slip, environmentally-friendly fiberglass surface
- Teak bench
- Educational information panels
- Attach a new ADA paved sidewalk ramp from Minot Ave.

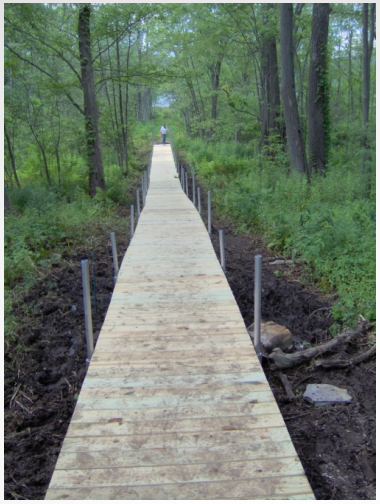
Prototype Boardwalks

(Fibergrate product website)

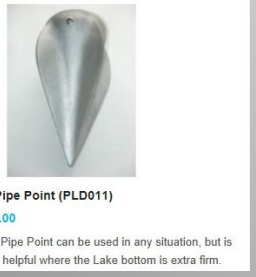
Grassy Pond, Acton

Building Supplies

- Traditional, pressure treated lumber materials
- Materials will be hand-carried in to site
- Galvanized pipes into substrate with pipe points attached to the bottom.



- Quality fiberglass reinforced plastic (FRP) decking material
- Light-weight, low maintenance, corrosion resistant, impact resistant, high strength.
- Significant ergonomic and safety benefits.
- More light pass through to plants below

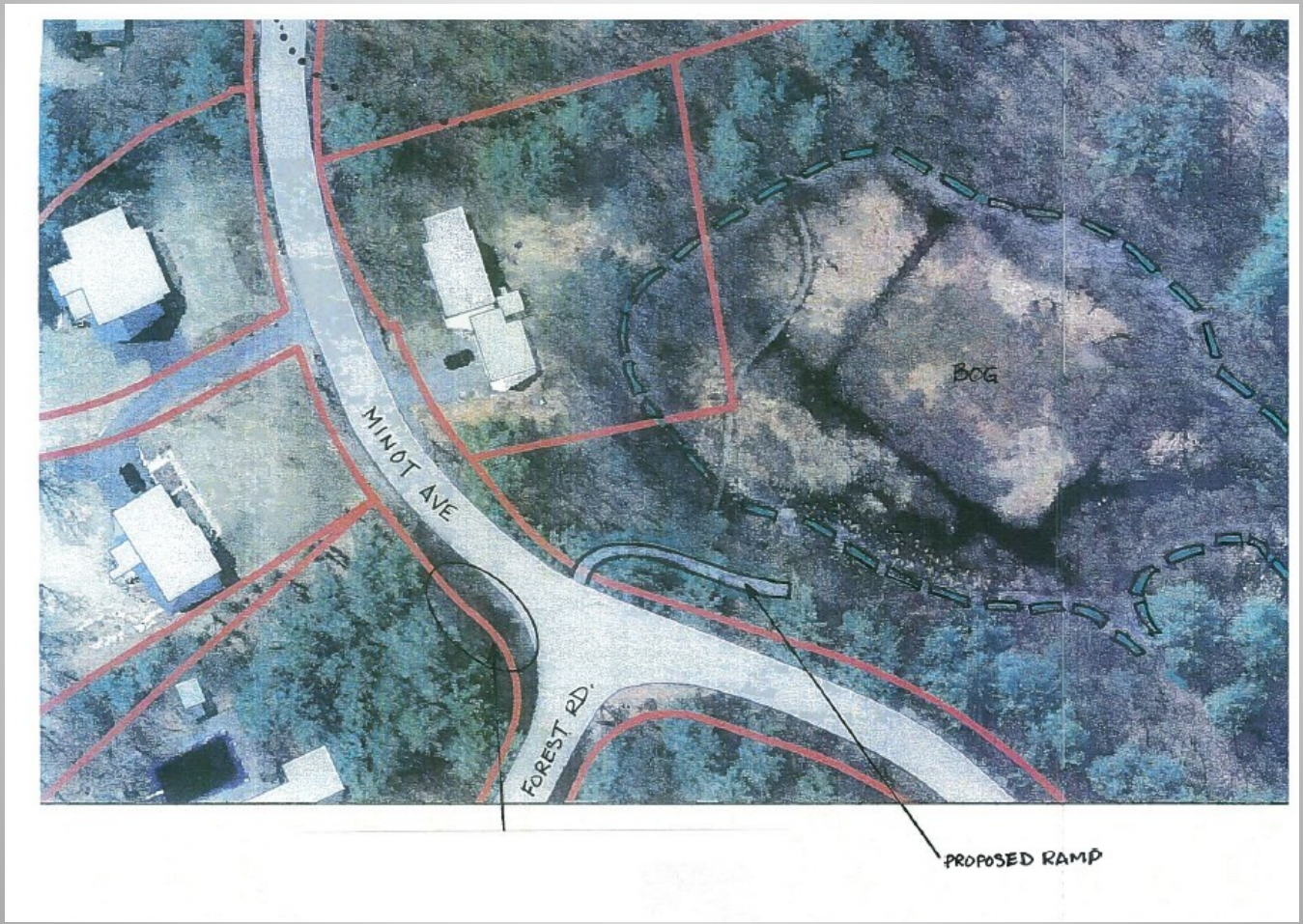


PATRIOT FOUNDRY & CASTINGS

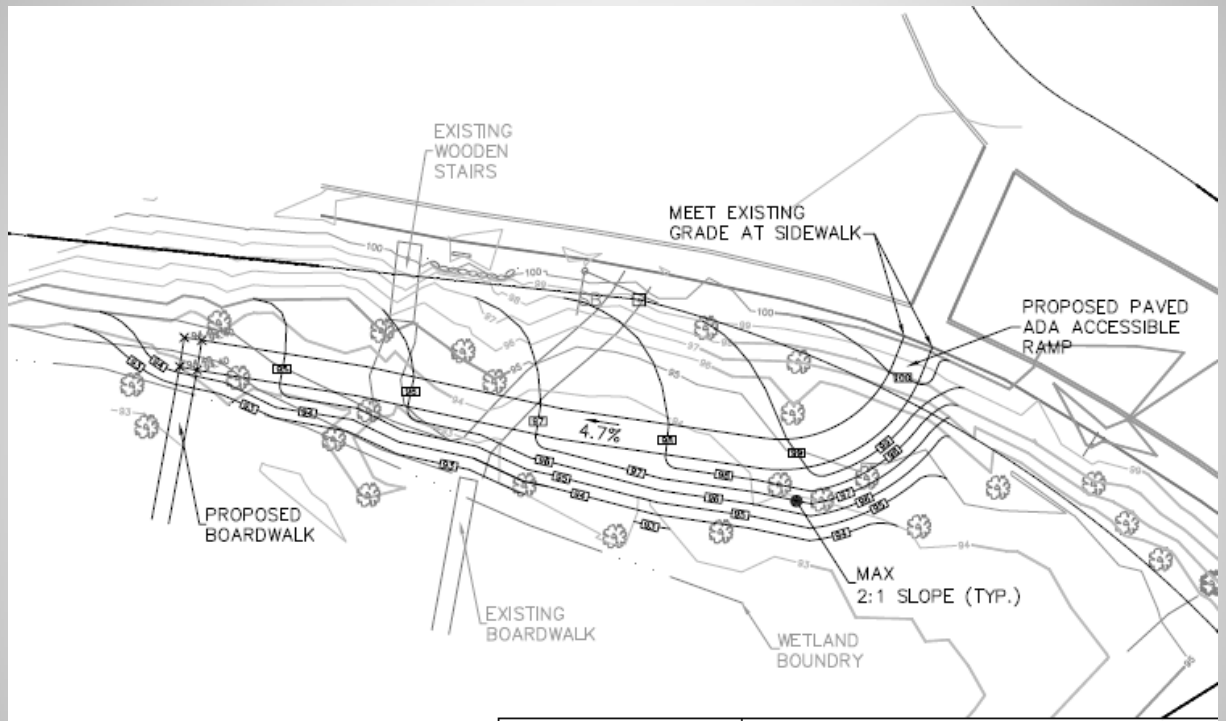
ISO 9001:2008 Certified

Patriot Foundry & Castings, LLC
RDS Dock Hardware
324 Hill Road
P.O. Box 298
West Franklin, NH 03235

Concept Drawing: Paved sidewalk to boardwalk from Minot Ave.



Engineered Plans for Paved Sidewalk from Minot Ave.

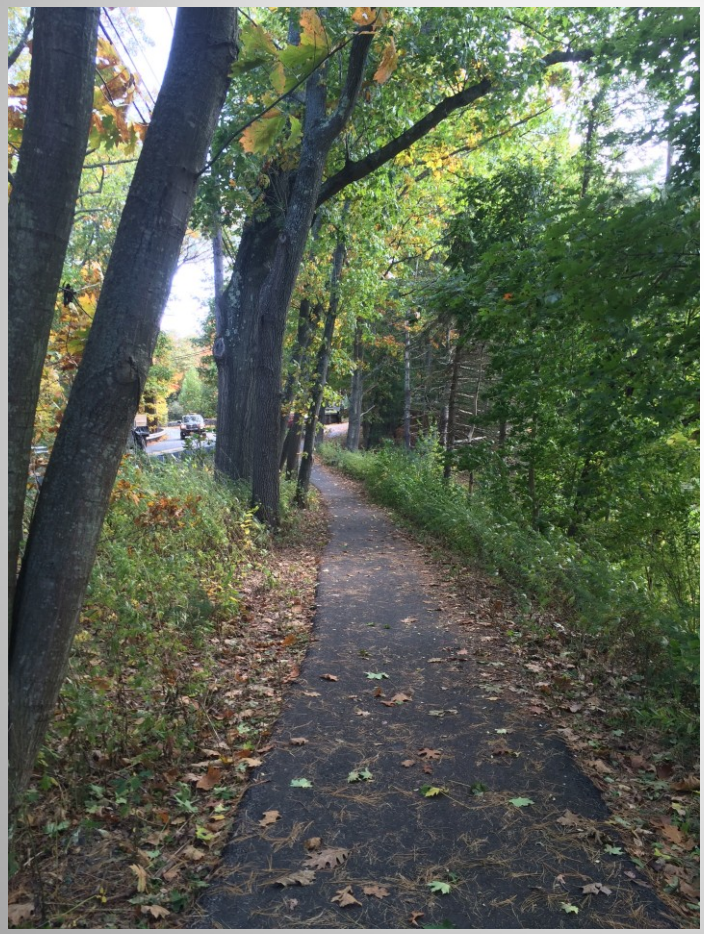


SURVEY: PC/QRP	TOWN OF ACTON ENGINEERING DEPARTMENT	
DESIGN: PC	ACTON ARBORETUM BOARDWALK	
DRAFTING: QRP		
CHECKED: PC	PROPOSED BOARDWALK	
SCALE: 1" = 20'	DRAWING NO: 1	DATE: 11/04/2013

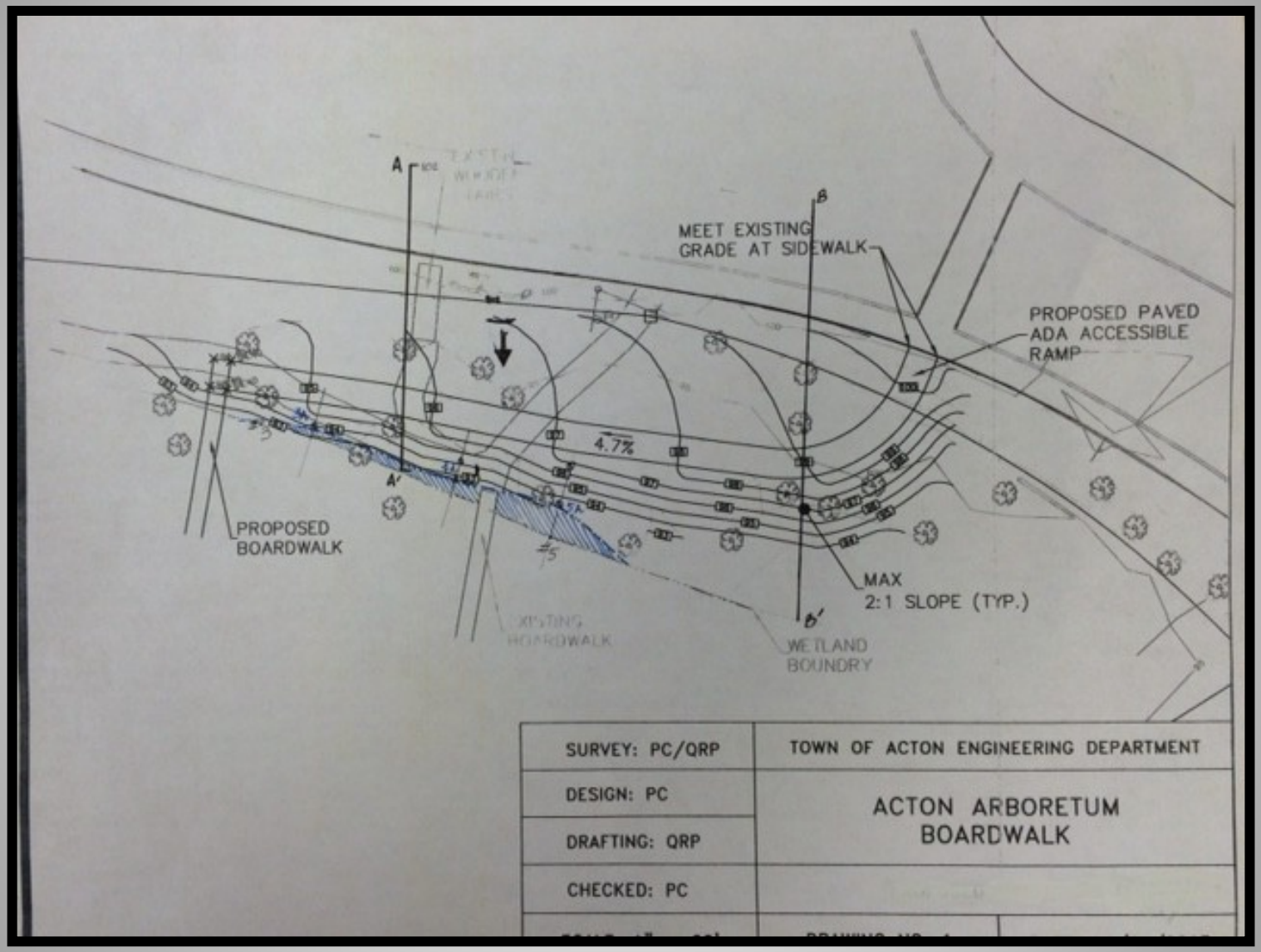
Wetlands Protection Act and Sidewalks

- **Acton By-Law Section F4.6 says that strict compliance may be waived when such action is in the public interest. Sidewalk access is in the public interest.**
- **Examples of Acton sidewalks built with 0' setback from wetlands:**
  - **Stow St. by RR Sta.**
  - **Main St. near 2A**
  - **Minot Av. near Conant School**
  - **2A Great Road near Nagog Mall**
  - **2A Great Road Davis Rd.**

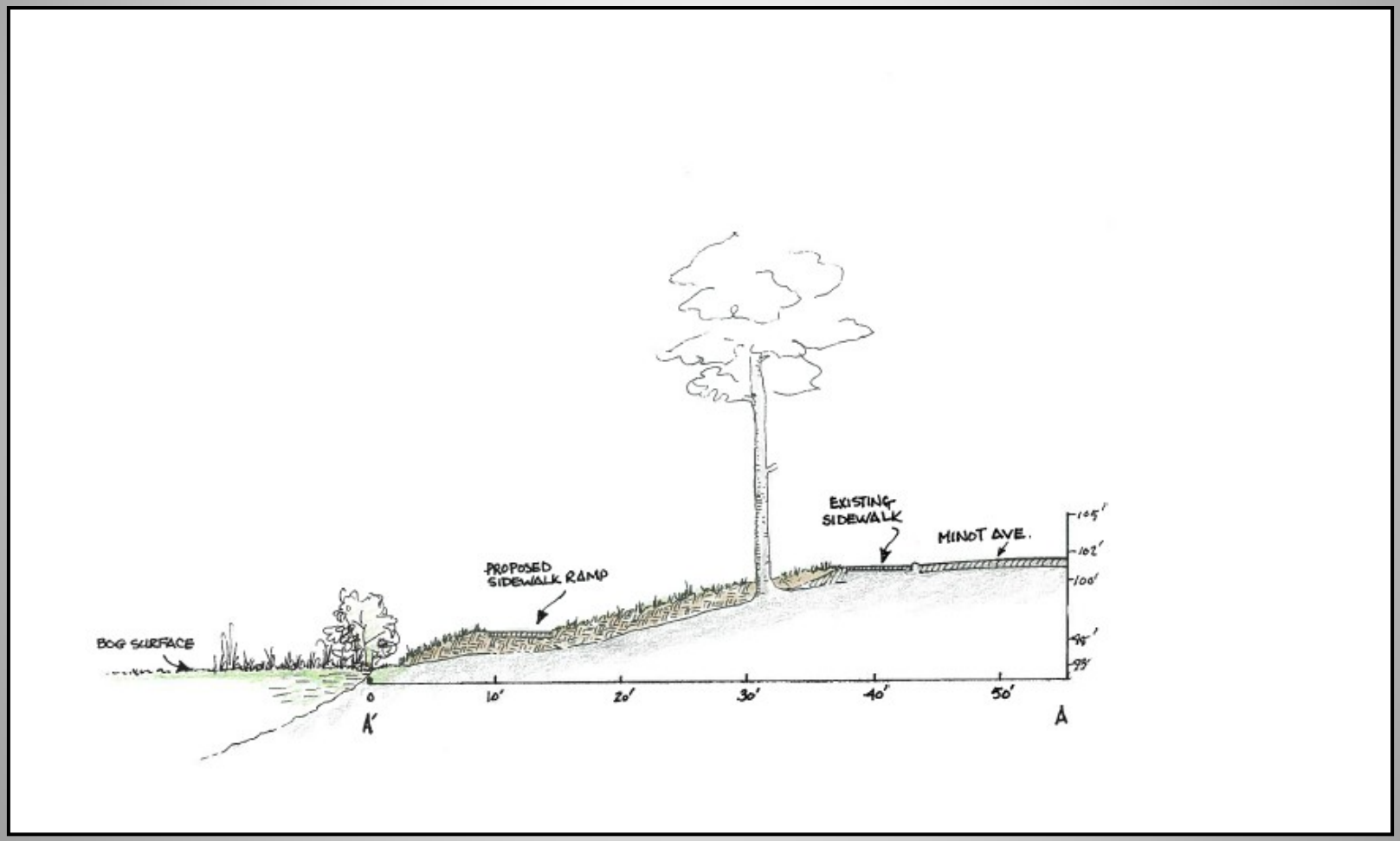
Sidewalk on Central St. Between Mt. Hope Cemetery and Summer Street



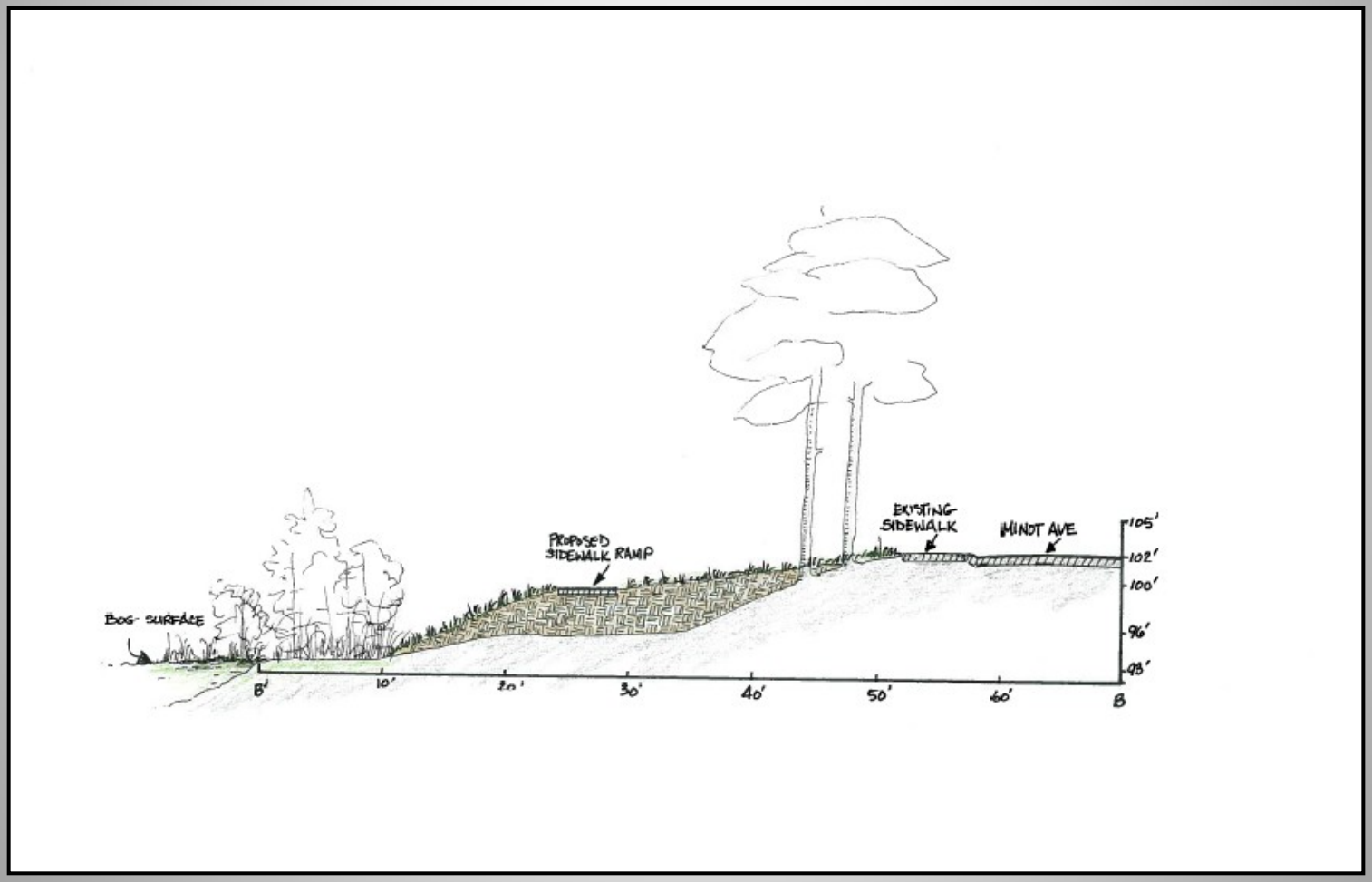
Cross Sections A&B



Minot Av. Sidewalk Ramp
Cross Section A



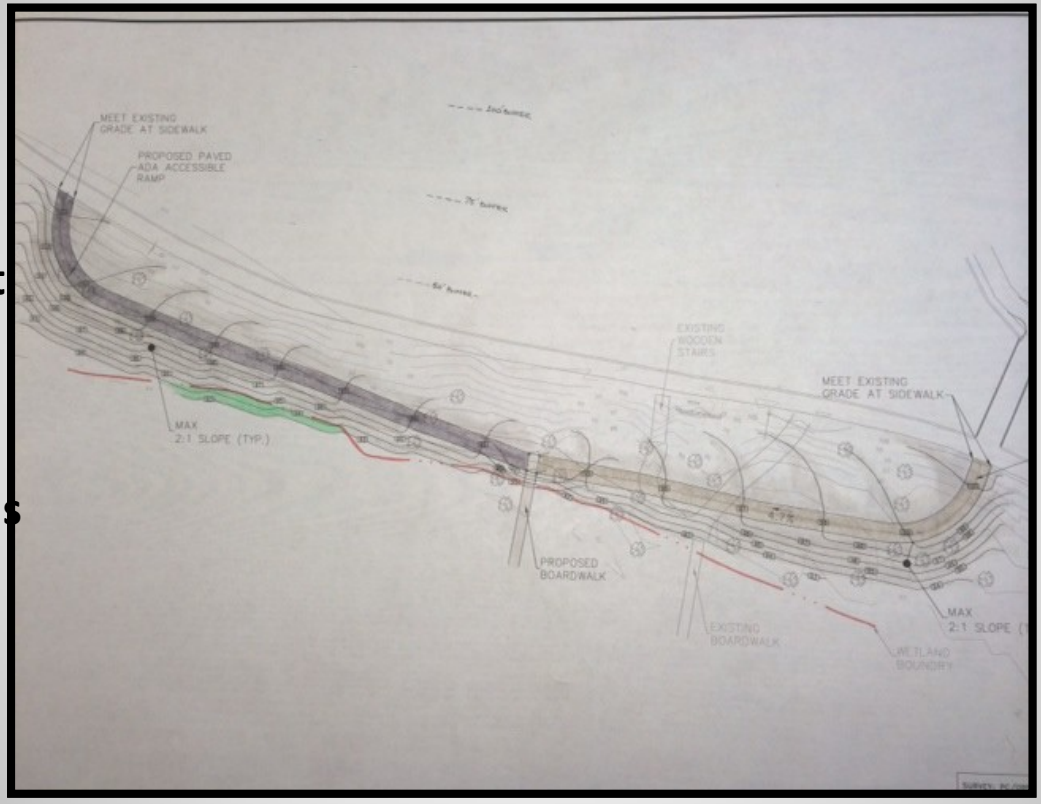
Minot Av. Sidewalk Ramp
Cross Section B



Comparison drawing: Sidewalk 1 – on the right and 2- on the left

Sidewalk 2:

- 10,000 cubic ft. fill under pavement
- 7 trees removed
- 450 sq. ft. wetlands fill
- 270’ distance from crosswalk
- 170’ long sidewalk



Sidewalk 1:

- 7,145 cubic ft. fill under pavement
- 5 trees removed
- 0 sq. ft. wetlands fill
- 0’ distance from crosswalk
- 128’ long sidewalk